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amendment of claim 38 is supported by the specification, for example, at page 21, line 26 to page 22, line 3. The amendment to claim 38 makes the body of the claim consistent with the preamble of the claim as filed and is not intended to narrow the intended scope of the claim. No new matter is introduced by the amendments.

Applicants acknowledge the allowance of claims 64-68 with appreciation. Claims 8, 9, 11, 45-52, 55 and 62 remain free of the cited art and are objected to for depending from a rejected base claim.

Rejection Over Marsh et al.

The Examiner rejected claims 38, 53, 54, 56-60 and 63 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent 4,649,037 to Marsh et al. (the Marsh patent). In response to Applicants' previous arguments, the Examiner noted that the method steps of claim 38 did not explicitly recite the formation of a mixture as noted in the preamble of the claim. The Examiner further asserted that the process of the Marsh patent could be used to form different powders. Applicants have clarified the relationship of the recited method steps of claim 38 with the preamble of the claim. Furthermore, with respect to claims 58 and claims depending from claim 58, Applicants believe that there has been a misunderstanding of the feeds disclosed in the Marsh patent. Based on these clarifications, the Marsh patent does not render Applicants' claims prima facie obvious. Applicants respectfully request reconsideration of the rejection based on the following comments.

With respect to claims 38, 53, 54, 56 and 57, Applicants have clarified the relationship of the reacting and collecting steps with the formation of the mixture recited in the preamble of claim 38. The Marsh patent does not teach or suggest formation of a mixture of powders. Also, the Examiner has not indicated how Applicants' claimed invention relating to the formation of a mixture of powders in a single collector is obvious over the teachings in the

non does  
claim 38  
mixture of  
product  
compositions

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Marsh patent. Thus, Applicants' claims are not prima facie obvious over the Marsh patent. Applicants thank the Examiner for clarification of the Examiner's interpretation of claim 38.

With respect to claims 58-60 and 63, in response to Applicants' arguments regarding the capability of varying the reactants with the Marsh apparatus, the Examiner noted that the Marsh apparatus has lines 1-4 feeding supply line 5. However, Applicants note that line 4 is a nitrogen purge that does not supply reactants to supply line 5. Nitrogen is directed into the chamber through circumferential supply opening 8. See column 7, lines 30-34. Line 3 supplies cooling water that would flow around supply line 5 and similarly does not supply reactants to supply line 5. Line 2 supplies compressed gas "to aid in feeding the admixture to the spray dryer." See column 7, lines 16-18. The admixture that forms the metal oxide powders is supplied through line 1. *does*

*indicates to the  
Particle  
Size  
not chemical  
Composition* As described in the Marsh patent, the primary particles remain substantially unchanged upon drying. See column 6, lines 33-37. Thus, only a single line, line 1, supplies a reactant composition into the spray dry chamber. In summary, of lines 1-4, only supply line 1 supplies a reactant composition to the spray dryer. With all due respect, the Marsh patent does not teach or suggest a reactant delivery system capable of supplying different reactant compositions or a method for producing particles based on a reactant delivery system with the capability of supplying different reactant compositions. Therefore, the Marsh patent does not render claims 58-60 and 63 prima facie obvious.

Since the Marsh patent does not render Applicants' claims prima facie obvious, Applicants respectfully request the withdrawal of the rejection of claims 38, 53, 54, 56-60 and 63 under 35 U.S.C. § 103(a) as being unpatentable over the Marsh patent.

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Rejections Over Marsh et al. and Acosta et al.

The Examiner rejected claims 1-7, 10, 12-14, 39-44 and 61 under 35 U.S.C. § 103(a) as being unpatentable over the Marsh patent as applied to claims 38, 53, 54, 56 and 57 and further in view of U.S. Patent 6,254,826 to Acosta et al. (the Acosta patent). The Examiner noted that the Marsh patent does not disclose one or more movable nozzles. The Examiner cited the Acosta patent for disclosing a multiple conduit substance transfer device. Also, the Examiner asserts that numerous known advantages of using multiple nozzles supply the motivation to combine the disclosures. However, neither the Marsh patent nor the Acosta patent disclose reacting a reactant stream initiated by an inlet nozzle that can move to direct the product flow into a particular collector. In addition, the Acosta patent does not make up for the deficiencies of the Marsh patent with respect to claims depending from claims 38 and 58. Thus, the combined disclosures of the Marsh patent and the Acosta patent do not render Applicants' claimed invention prima facie obvious. Applicants respectfully request reconsideration of the rejection based on the following comments.

With respect to claims 1-7, 10 and 12-14, Applicants have amended claim 1 to clarify that the first collector and the second collector are operably distinct, i.e., that the collectors are in parallel rather than in series. Thus, the claimed collectors are distinct from the collectors 14, 19 and 23 disclosed in the Marsh patent, which are in series and, thus, operably connected.

Also, Applicants respectfully maintain that there is no motivation to combine these references as suggested by the Examiner. The motivation suggested by the Examiner with respect to the teaching in the Acosta patent of a supply system with multiple supply lines is not relevant with respect to the present claims. There is no motivation to combine the teachings of the Acosta patent, which teaches delivering measured quantities of a liquid to different tubes (see, for example, column 12, lines 25-48) with the teachings of the Marsh patent that describes

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forming powders by spray drying a solution following at least partial hydrolysis of a metal composition in the solution (see throughout).

Also, an evaluation in a Graham-obviousness analysis involves evaluating the differences between the claimed subject matter and the disclosed subject matter in the cited references. In comparing Applicants' claimed method in claim 1 with the method of the Marsh patent, the Marsh method does not involve moving a nozzle, producing a second, materially different product after moving the nozzle and collecting the materially different product after moving the nozzle. As described in the following, the Acosta patent clearly does not make up for the deficiencies of the Marsh patent.

While the Acosta patent described moving nozzles, the Acosta patent does not disclose reacting a flow in a fluid stream to form a product composition. Thus, neither the Marsh patent nor the Acosta patent teach or suggest reacting a reactant stream in which the reactant stream is initiated from an inlet nozzle that can move to direct the product flow into different collectors. Since the cited references do not disclose such a feature, the references do not render the claimed invention obvious.

Since the cited references alone or together do not teach or suggest reacting a reactant stream initiated with a nozzle that can move to direct the product composition into different collectors and since there is no motivation to combine the disclosure of the Marsh patent with the disclosure of the Acosta patent to obtain Applicants' claimed invention, the combined disclosures of the Marsh patent and the Acosta patent do not render Applicants claims 1-7, 10 and 14-17 prima facie obvious.

With respect to claims 39-44, these claims depend from claim 38. The deficiencies of the Marsh patent with respect to claim 38 are described above. In summary, the Marsh patent does not teach or suggest forming a mixture of powders. The Acosta patent discloses the delivery of a single substance from a container in a measured quantity from a

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container. See, for example, column 12, lines 25-48. The Acosta patent does not make up for the deficiencies of the Marsh patent since the Acosta patent does not teach or suggest forming a mixture of powders following the reacting of a reactant stream. Therefore, the combined disclosures of the Marsh patent and the Acosta patent do not render obvious Applicants' claims 39-44.

Claim 61 depends from claim 58. The deficiencies of the Marsh patent with respect to claim 58 were described above. Specifically, the Marsh patent does not teach or suggest a reactant delivery system capable of supplying different reactant compositions or methods for producing particles based on a reactant delivery system with the capability of supplying different reactant compositions. Similarly, the device disclosed in the Acosta patent delivers a measured amount of a single substance from a remote storage container. See, column 12, lines 25-48. Thus, the Acosta patent does not make up for the deficiencies of the Marsh patent. Since the Marsh patent and the Acosta patent alone or together do not teach or suggest methods based on a reactant delivery system capable of supplying different reactant compositions, the combined disclosures of the Marsh patent and the Acosta patent do not render claim 61 prima facie obvious.

Since the combined disclosures of the Marsh patent and the Acosta patent do not render Applicants' claimed invention obvious, Applicants respectfully request withdrawal of the rejection of claims 1-7, 10, 12-14, 39-44 and 61 under 35 U.S.C. § 103(a) as being unpatentable over the Marsh patent as applied to claims 38, 53, 54 56 and 57 and further in view of the Acosta patent.

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### CONCLUSIONS

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



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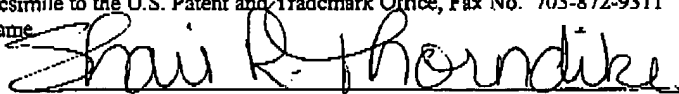
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May 9, 2003  
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Shari R. Thorndike]

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ATTACHMENT  
REDLINED AMENDMENTSpecification As Amended

At page 45, lines 4-10, the paragraph has been amended as follows.

In particular, nanoscale manganese oxide particles have been formed. The production of these particles is described in copending and commonly assigned U.S. Patent Application Serial No. 09/188,770, now U.S. Patent 6,506,493 to Kumar et al., entitled "Metal Oxide Particles," incorporated herein by reference. This application describes the production of  $\text{MnO}$ ,  $\text{Mn}_2\text{O}_3$ ,  $\text{Mn}_3\text{O}_4$  and  $\text{Mn}_5\text{O}_8$ .

Claims As Amended

Claims 1 and 38 have been amended as follows.

1. (Four Times Amended) A method for obtaining a plurality of quantities of compositions with an apparatus comprising a plurality of collectors and a nozzle comprising a reactant inlet, the method comprising:

reacting a first quantity of fluid reactants within a fluid stream at least a portion of which is from the reactant inlet to form a first quantity of product composition;

collecting the first quantity of product composition from the fluid stream using a first collector;

moving the nozzle relative to the first collector and second collector following completion of the collection of the first quantity of product composition;

following completion of the collection of the first quantity of product composition, reacting a second quantity of fluid reactants within the fluid stream at least a portion of which is from the reactant inlet to form a second quantity of

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product composition, the second quantity of product composition being materially different from the first quantity of product composition; and collecting the second quantity of product composition from the fluid stream using a second collector operably distinct from the first collector.

38. (Twice Amended) A method for producing a mixture of compositions, the method comprising:

reacting a first quantity of fluid reactants to form a first quantity of product composition;  
collecting the first quantity of product composition using a collector;  
following completion of the collection of the first quantity of product composition, reacting a second quantity of fluid reactants to form a second quantity of product composition, the second quantity of product composition being materially different from the first quantity of product composition; and collecting the second quantity of product composition using the collector to obtain a mixture of the first quantity of product composition and the second quantity of product composition.